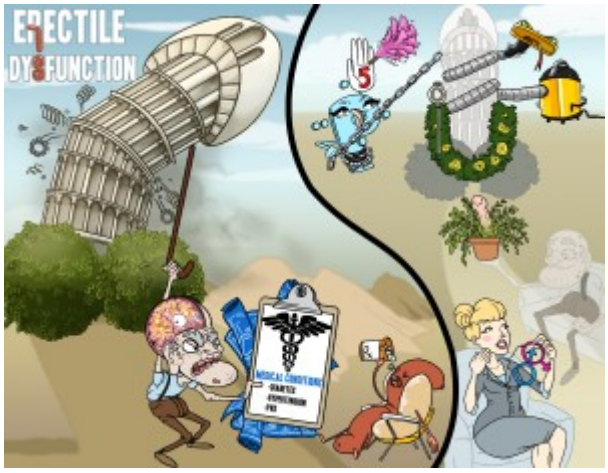
Erectile Dysfunction

Erectile dysfunction is the inability to achieve or maintain an erection for intercourse. Causes of erectile dysfunction include testosterone deficiency, medical conditions, medications, and psychological factors. Drug therapy includes phosphodiesterase type 5 inhibitors to relax smooth muscles for increased blood flow to the corpus cavernosum. Vacuum constriction devices, intraurethral devices, and penile implants may be used to achieve an erection. Sexual counseling should include the patient's partner and begin prior to medical treatment.



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Cause/Mechanism

Age-Related Changes
Older Adult

Erectile dysfunction may be associated with age-related changes affecting sexual desire, performance and relationships. Age-related changes in males include an increase in prostate size, decreases in sperm and testosterone production, and a decrease in testicular size and firmness.

Psychological
Psychological-brain

Psychological-brain
Psychological issues may lead to erectile dysfunction. Stress, depression, and anxiety affects attention, relaxation and focus during sex, and challenges the ability to produce and/or sustain an erection. Further, repeated exposure to erectile dysfunction can exacerbate these conditions, and perpetuate negative feedback and feelings about future sexual encounters. This cycle can challenge relations between sexual partners and darken a once pleasurable event for one’s life.

Medical Conditions
Medical Conditions

Various medical conditions may cause erectile dysfunction, in addition to the psychological conditions previously mentioned. Medical conditions such as diabetes, hypertension, Peyronie’s disease and peripheral vascular disease (refer to the Picmonic on "Peripheral Arterial Disease") can produce or relate to erectile dysfunction. The pathology for each condition and how it is related to erectile dysfunction can differ from one condition to the next, and managing the underlying condition can support management of erectile dysfunction.

Drug-Induced
Drugs

Erectile dysfunction may be a side effect of various medications. Medications can include antihypertensives, tricyclic antidepressants, beta blockers, and diuretics. Alcohol, nicotine, and recreational drugs may also contribute to situational or persistent erectile dysfunction. A good differential diagnosis for erectile dysfunction should include a medication reconciliation, including herbal and OTC formulations, as well as a good social history of illicit drug use, nicotine and alcohol use (as well as assessment of a patient’s readiness to decrease or omit such use).

Assessment

Sexual Dysfunction (Unable to Maintain Erection)
Limp-wiener

A comprehensive term including erectile dysfunction or conditions around sexual dysfunction, including sexual desire disorders (e.g sexual aversion), orgasmic disorders (premature ejaculation) and sexual pain disorders. The acronym PENIS is a good memory mnemonic to remember a differential diagnosis approach for sexual dysfunction-related conditions. (P) Psychosocial, or if nighttime erections still occur; (E) Endocrine, or the presence of diabetes or hypogonadism (low testosterone); (N) Neurogenic, or the presence of a spinal cord injury or central/peripheral nervous system condition; (I) Insufficient blood flow, such as from atherosclerosis or PAD; (S) Substances, such as medications like antihypertensives or alcohol.

Interventions

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Phosphodiesterase Type 5 (PDE5) Inhibitors

Phosphorus-P Duster with (5) hand in Inhibiting-chains

Phosphodiesterase type 5 (PDE5) inhibitors are indicated for patients with erectile dysfunction. The medications increase blood flow to the corpus cavernosum by relaxing smooth muscles. Examples of PDE5 inhibitors include sildenafil, tadalafil, vardenafil, and avanafil. This class of medication contributes to systemic hypotension, and the use of nitrates w/in the past 48 hours is generally contraindicated.

Vacuum Constriction Devices

Vacuum Constrictor

Vacuum constriction devices pull blood into the corporeal body to produce an erection. Examples of vacuum constriction devices retaining venous blood for maintaining an erection include a penile ring or constrictive band.

Intraurethral Devices

In-U-Wreath Device

In combination with vasoactive drugs, intraurethral devices enhance blood flow into the penile arteries. Vasoactive medications are administered as a topical gel, intracavernosal self-injection, or insertion of a pellet into the urethra using a medicated urethral system for erection (MUSE) device. Examples of vasoactive medications include papaverine, alprostadil (Caverject), and phentolamine (Vasomax).

Penile Implants

Penis In-plants

Since these surgical procedures are highly invasive and may cause complications, penile implants are indicated for patients experiencing severe erectile dysfunction. Complications related to penile implants include mechanical failure, infection, and erosion. Semi-rigid or inflatable penile prostheses are implanted into the corporeal bodies to sustain an erection firm enough for intercourse.

Considerations

Sexual Counseling

Sex-symbol Counselor

Since many patients affected by erectile dysfunction are uncomfortable discussing their issues, sexual counseling is recommended to assess and address the patient's psychosocial status. Sexual counseling should be part of the assessment into a patient's presenting sexual history and complaints to fully understand the presence of sexual dysfunction. Since sexual dysfunction affects relationships, the patient's partner should be included during counseling sessions.

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